



FY 2017 results

Analysts Conference Call

March 14, 2018

Agenda and contents

Speakers: Andy Barr, CEO and General Manager
Renato Gallo, CFO
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1. Strategic business overview

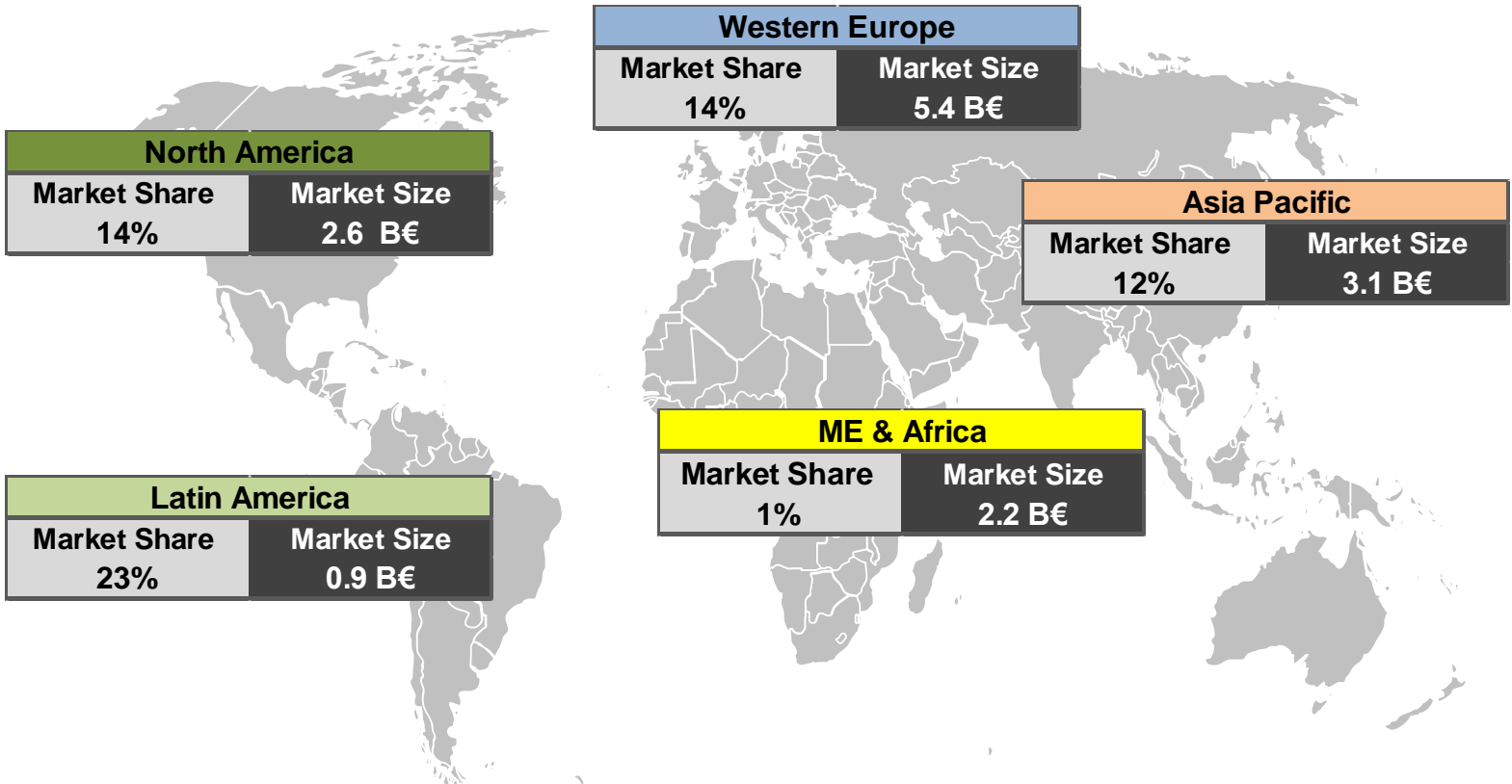
Strategic overview

- **A new overview.** Ansaldo STS has undertaken a strategic business overview in recent months. Key factors to address have been slower market growth, changing competition and new future trends.
- **Flat market.** Our assumption for the coming five years is an annual average addressable market of €15.4bn, representing just 0.8% growth.
- **Potential.** Against this flat background Ansaldo STS has the potential to exceed the market on the basis of its favourable geographic and business mix.
- **Projects.** We shall put projects at the centre of our business. Whilst strengthening our domestic markets there are four areas in particular of future focus.

Future focus areas

- Turnkey projects accessing PPP financing are expected to become increasingly relevant
- O&M for Turnkey is expected to grow faster than the average market
- Technology – ERTMS, CBTC will be differentiators
- Enablers – automation, digital, satellite, Hitachi technologies

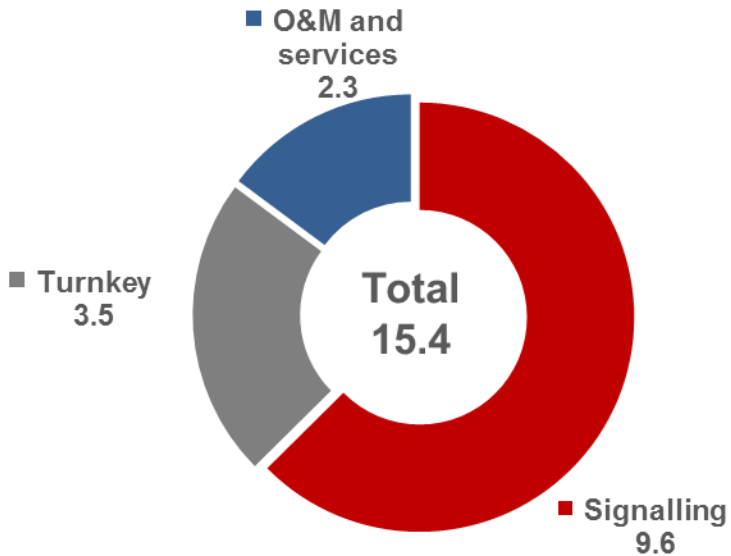
- Overall market share is approximately 11%
- ASTS has the potential to exceed the market growth, allowing us to maintain and grow the current market share



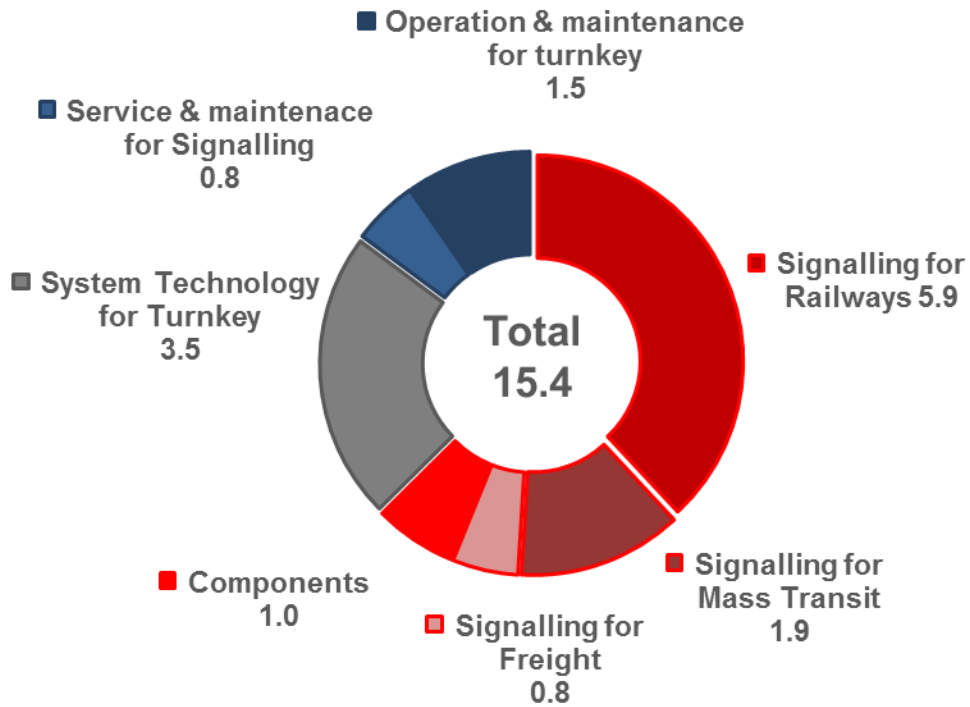
ASTS Market share: 2014-2016 average
ASTS addressable market size: 2018-2022 average

- The €15.4bn addressable market is divided into three principal segments: signalling, systems for turnkey, services.
- Particular growth areas for us are operation and maintenance (O&M) for turnkey in general, and system technology for turnkey in north America in particular.

Market by segment (€bn)

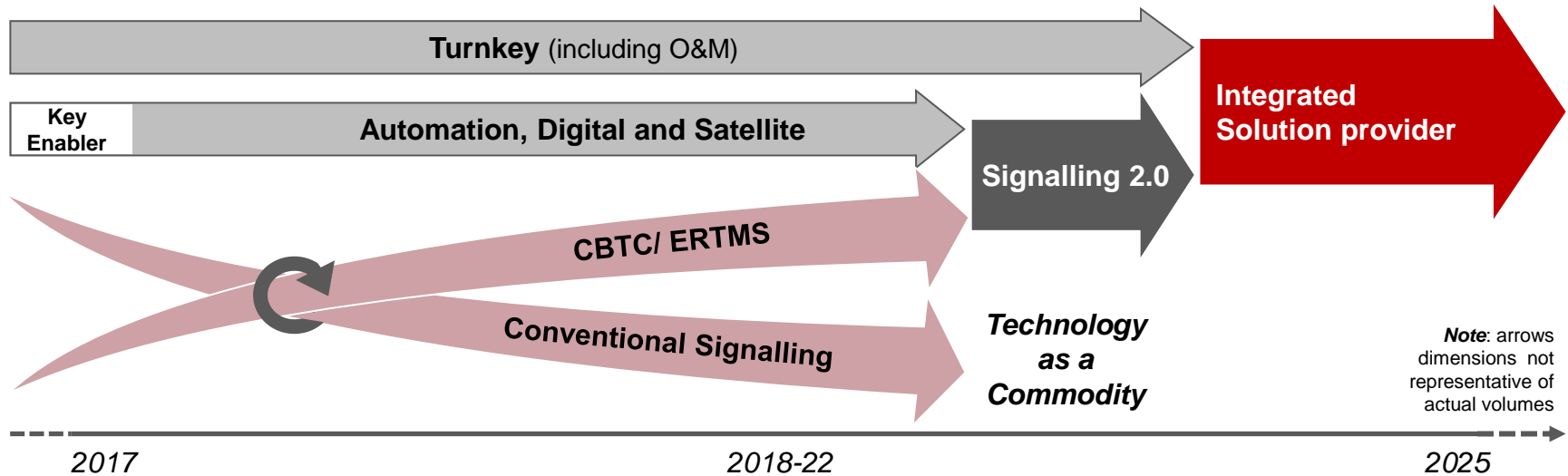


Market by lines of business (€bn)



Forecasts based on analysis of projects in 60 countries

ASTS vision for the future



- **Future commoditization of all Signalling technologies:** ASTS to continue investing in **CBTC/ERTMS** that is globally replacing conventional Signalling technologies, becoming a commodity
- **Automation, Digital and potentially Satellite** as new enablers for the future Business Models and innovative Value Propositions (some opportunities in 2018-22, expected growth afterwards)
- ASTS to leverage its strengths in **Turnkey Management** to become a full system integrator
- Business will be focused on the integration of all non conventional/advanced technologies in **End-to-End solutions for multi-modal operators**

Future business as provider of integrated solutions embedding owned technologies

I - Organic Growth

Specific initiatives

- Leverage **current positioning by geographies and line of business** to outperform the market
- Exploiting **domestic growing markets** (e.g. North America).
- Adopting **opportunistic approach** in non-domestic focusing on turn-key projects and standard technologies
- Exploiting **O&M business** leveraging on its assets and on partnerships, while starting developing **new innovative services/ value propositions**

II - Non-Organic Growth

- Explore selective **JV and M&A** by markets and technology
- Strengthening the position in big markets though **local agreements** (e.g. UK and China)

III - Organisation's Events

- Investigate possible adaptation of the **operating model** in line with the Business requirements
- Tuning current **organizational structure and delivery model**
- **Localizing key capabilities** (e.g. System Integration / CBTC in US; delivery and expertise in local areas)
- Strengthening **Structured Finance**

IV - Effectiveness and Efficiency

- **Platforms optimization and future technologies**
- Focusing investments mainly on core technologies, **ERTMS, CBTC and Automation**
- Keep on working on **efficiency programs**
- Exploiting continuous improvement initiatives

2. Orders and recent performance by region

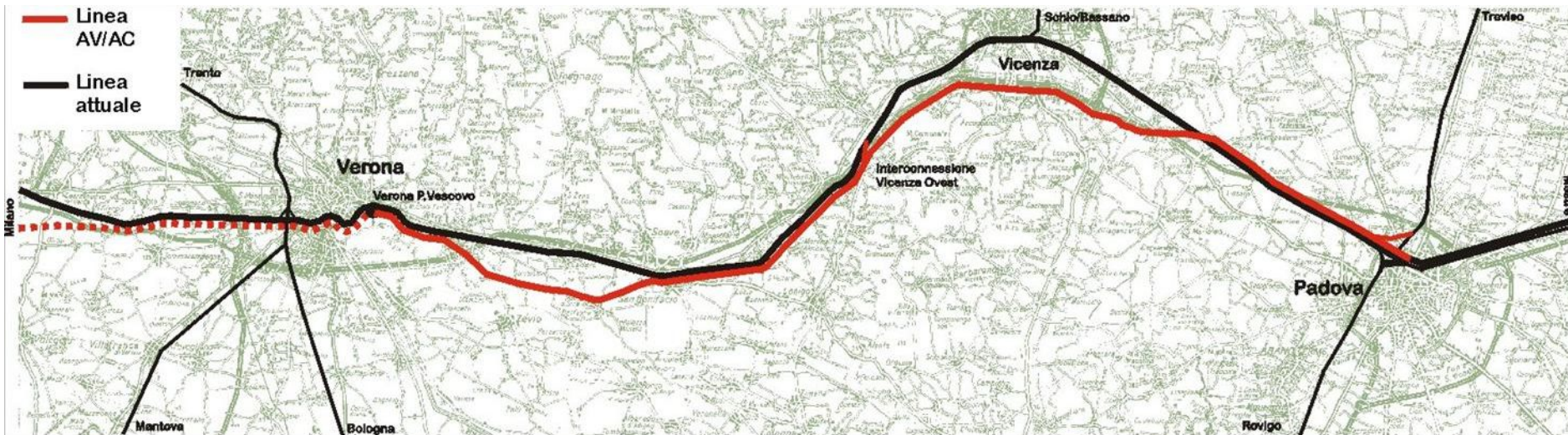
FY 2017 Results - Main orders detail

Country	Project Name	Customer	Value (M€)
Italy	HS/HC Verona-Vicenza junction	IRICAV 2	336
USA	Baltimore Metro	MTA	133
Italy	Framework Agreement with RFI	RFI	100
Various EU/Asia	Components	Various	82
Denmark	Copenhagen Cityringen variation orders (included O&M)	Metroselskabet	82
Italy	On board equipment for Caravaggio	HRI	63
Various EU/Asia	Service & Maintenance	Various	58
USA	Components	Various	56
Australia	Rio Tinto variation orders	Rio Tinto	48
Italy	ACC and ACC-M signalling equipment	RFI	40
Italy	Naples Line 6 variation orders	Naples Municipality	24
USA	Stanford-New Haven line signal	MNRR	22
USA	Los Angeles - Westside extension -	LACMTA	21
Australia	On board equipment	Rotem	20

HS/HC Verona-Padua line

Ansaldo STS, following the recent CIPE resolution concerning the approval of the definitive project for the Verona-Vicenza junction, the first functional section of the Verona-Padua High Speed/High Capacity line, is involved in the project execution through the participation in the IRICAV DUE consortium as concession's owner.

The amount of Ansaldo STS stake is about EURO 336 million.



Baltimore Metro

Hitachi Ansaldo Baltimore Rail Partners, LLC, a limited liability corporation between Hitachi Rail Italy SpA and Ansaldo STS USA, Inc. (the US subsidiary of Ansaldo STS) has been awarded a \$400.5 million contract from Maryland Transit Authority (MTA) to provide a new metro fleet of railcars and a Communication Based Train Control (CBTC) system for the Baltimore Metro Subway Link.

Ansaldo STS scope of work is equivalent to \$148 million.

The award of the Baltimore project marks Ansaldo STS's largest win in North America and represents a significant milestone in the company's recognition as a major North American CBTC provider. The company has already successfully delivered and is delivering CBTC projects of similar caliber both in North America and globally. Ansaldo STS will integrate a new CBTC system into the existing 15.5 miles of MTA infrastructure.



ACC and ACC-M signaling equipment

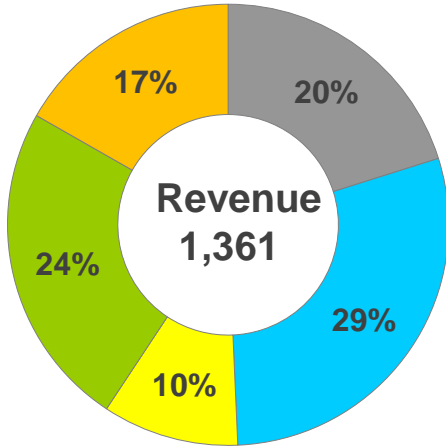
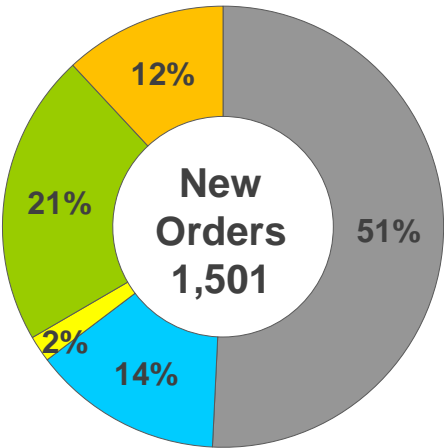
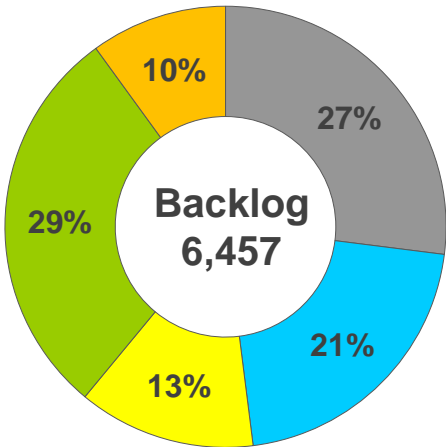
Ansaldo STS has been awarded of a contract worth EURO 40 million by RFI (Rete Ferroviaria Italiana) for the supply of ACC and ACC-M signaling equipment. Scope of the contract for Ansaldo STS is to supply all the components for the Computer-Based Interlocking System (also as a Multi-station), such as: the Central Post that carries out vital operations, users interfaces both for operators and maintenance staff, the peripheral units and object control devices (signals, switches, track circuits).

The scope of work also includes innovative system configuration and verification tools developed by Ansaldo STS, which allow a faster and faster design and activation phase.

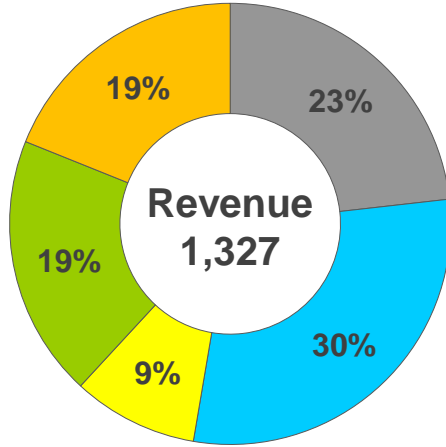
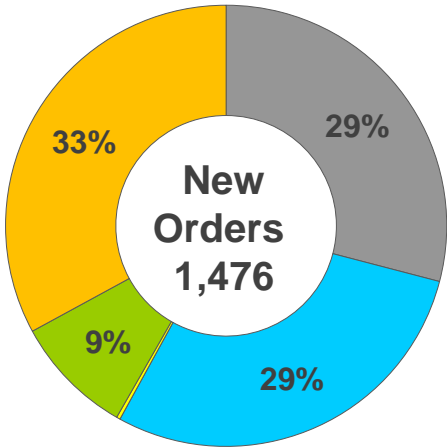
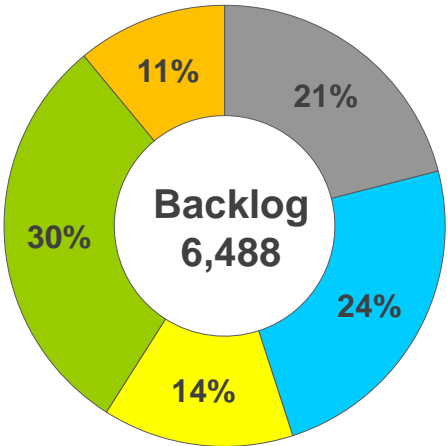
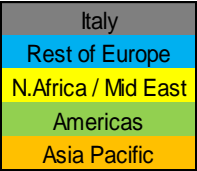


Backlog, Orders & Revenue by Geographic Area

FY - 2017



FY - 2016



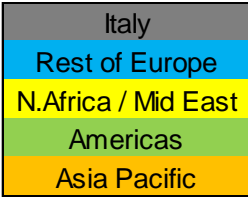
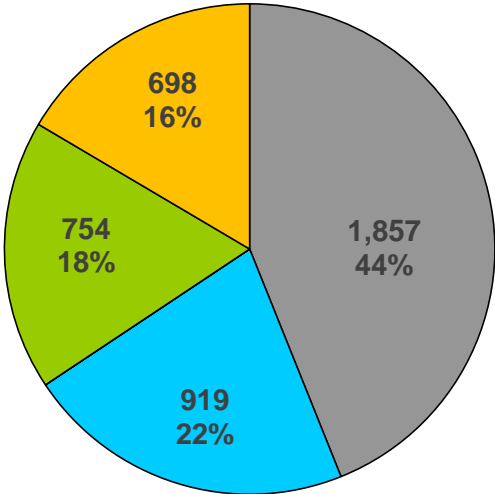
Orders & Revenues by Area – FY 2017 vs FY 2016

ORDERS	FY 2017	FY 2016	% change
Italy	762	429	78%
Rest of Europe	210	427	-51%
N. Africa / Middle East	29	4	n.s.
Americas	322	130	148%
Asia Pacific	178	486	-63%
TOTAL	1,501	1,476	2%

REVENUE	FY 2017	FY 2016	% change
Italy	274	308	-11%
Rest of Europe	397	391	2%
N. Africa / Middle East	136	122	11%
Americas	326	255	28%
Asia Pacific	228	251	-9%
TOTAL	1,361	1,327	3%

Headcount

Country	Main Locations	Headcount
ITALY	Genoa, Naples, Turin, Potenza, Branches	1,857
FRANCE	Les Ulis, Riom	658
SPAIN	Madrid	174
SWEDEN	Stockholm	69
OTHER EUROPE	Munich., London	18
USA - CANADA	Pittsburgh, Batesburg, Montreal	754
AUSTRALIA	Perth, Brisbane	260
INDIA	Bangalore	313
MALAYSIA	Kuala Lumpur	62
CHINA	Beijing	63
TOTAL HEADCOUNT		4,228



3. Recent key events

Stockholm Red Line Metro update (1/2)

- Ansaldo STS was initially awarded a contract for the upgrade of the existing safety and signalling system on the Stockholm Metro System Red Line by AB Storkstockholms Lokaltrafik (SL) on 3 November 2010. The work was expected to complete within 40 months. However, various changes in the scope of work led the parties to agree extensions of the contract in December 2013 and December 2014, as well as a new contract value of approximately EUR 127 million.
- In September 2017 SL raised a claim against Ansaldo STS for a repayment of approximately EUR 45 million, including VAT and interest, by no later than 30 October 2017 on the grounds that the project plan and timetable provided by Ansaldo STS were not realistic and robust.
- Ansaldo STS has repaid to SL on last October 27, without prejudice and under protest, approximately EUR 45 million, including VAT and interest.
- On November 7 SL has terminated unilaterally the contract, alleging breach by Ansaldo STS and asking that Ansaldo STS repays within November 17 advance payments received (about Euro 24 million, plus VAT for about Euro 6 million), plus interest, in addition to penalties and damages allegedly suffered, estimated in the aggregate of about Euro 17 million.
- On December 20 an agreement was signed between Ansaldo STS and SL, regarding the return to the Company of all the bonds previously provided in favor of SL, following the repayment of the remaining advance payments paid by SL to the Company, for an amount of approximately EUR 31 million (VAT and interest included).

Stockholm Red Line Metro update (2/2)

- According to the signed agreement Ansaldo STS paid back the above mentioned amount on 25 January 2018, against the simultaneous release by SL of all the bonds. This payment, along with all previous repayments to SL for an amount of EUR 45 million (VAT and interest included) was made under protest, without prejudice to Ansaldo STS' rights and pending the final legal resolution of the dispute.
- The Company is evaluating all the possible judicial initiatives to defend its own rights, including the right to obtain the full payment of the work performed to date as well as the compensation for the damages suffered, in particular due to the unilateral termination by SL of the contractual relationship.

Ansaldo STS technology and delivery capability key to Rio Tinto Fully autonomous freight rail trial success

Ansaldo STS, a recognized global leader in driverless technology for metro and rail solutions, has now proven its expertise in autonomous heavy freight rail, following Rio Tinto's recent successful trial of Australia's first fully autonomous heavy haul train journey.

Through the development and application of highly specialized technology based on the ETCS level 2 signalling standard, Ansaldo STS has worked with Rio Tinto to engineer and deploy a train control solution for Rio Tinto's remote iron ore rail operations in north-west Western Australia that will support the complete automation of the miner's rail operations.

The solution includes the installation of a driving module on board each train and enables the fleet's operation to be centrally managed from a control centre many kilometers away in Perth. Such a solution delivers significant benefits to the operator including increased safety and productivity.



Ansaldo STS and Hitachi Rail Italy at Expo Ferroviaria 2017 (1/2)

EXPO Ferroviaria, the most important event of the railway sector in Italy, opened in Milan at Rho Fair from 3rd to 5th October. Ansaldo STS and Hitachi Rail Italy - since 2015 part of the Hitachi Group - were present to the exhibition with a joint booth in which they presented their technology and their innovation that places them among the main players of the sector.

EXPO Ferroviaria represents for the two companies, more and more engaged on the international market and protagonists of events overseas, an important showcase, as well as a fundamental opportunity of discussion and business in their own Country, where they are committed to important projects, some already completed and others either in progress or in development.



Ansaldo STS and Hitachi Rail Italy at Expo Ferroviaria 2017 (2/2)

“EXPO Ferroviaria - declared Andy Barr, CEO of Ansaldo STS - represents the most important Italian showcase of our technologies and, overall, of our industry. Our presence in Milan means a lot to us, because we had the possibility to display our main products and, most of all, to interact directly with our clients, customers and visitors. We are proud to say that in Italy we played a pivotal role in the development of railways since the very beginning. As Ansaldo STS we are proud to continue our technological efforts in order to improve the quality of the service for our clients and for our passengers. There are many challenges ahead, particularly in maintaining the high win percentage of good contracts, but we are well known as committed and reliable workers who are used to fulfil any task. We believe in innovation and our place within the Hitachi family secures the access to some exciting new products.”



New Dynamic Headway Solution for Copenhagen Metro (1/2)

Ansaldo STS has signed in June 2017 a MoU with Metroselskabet to develop a Proof of Concept for a new Dynamic Headway solution leveraging Hitachi technologies for the Copenhagen Metro.

The new Dynamic Headway solution will be designed using both Ansaldo STS's train control systems and Hitachi's digitalization and IoT (Internet of Things) technology to detect congestion through sensors at stations in order to analyze demand. A dynamic solution will help resolve congestion before it impacts on passengers, thereby increasing passenger satisfaction. For the operators this means saving energy and operation costs by increasing utilization of services.



New Dynamic Headway Solution for Copenhagen Metro (2/2)

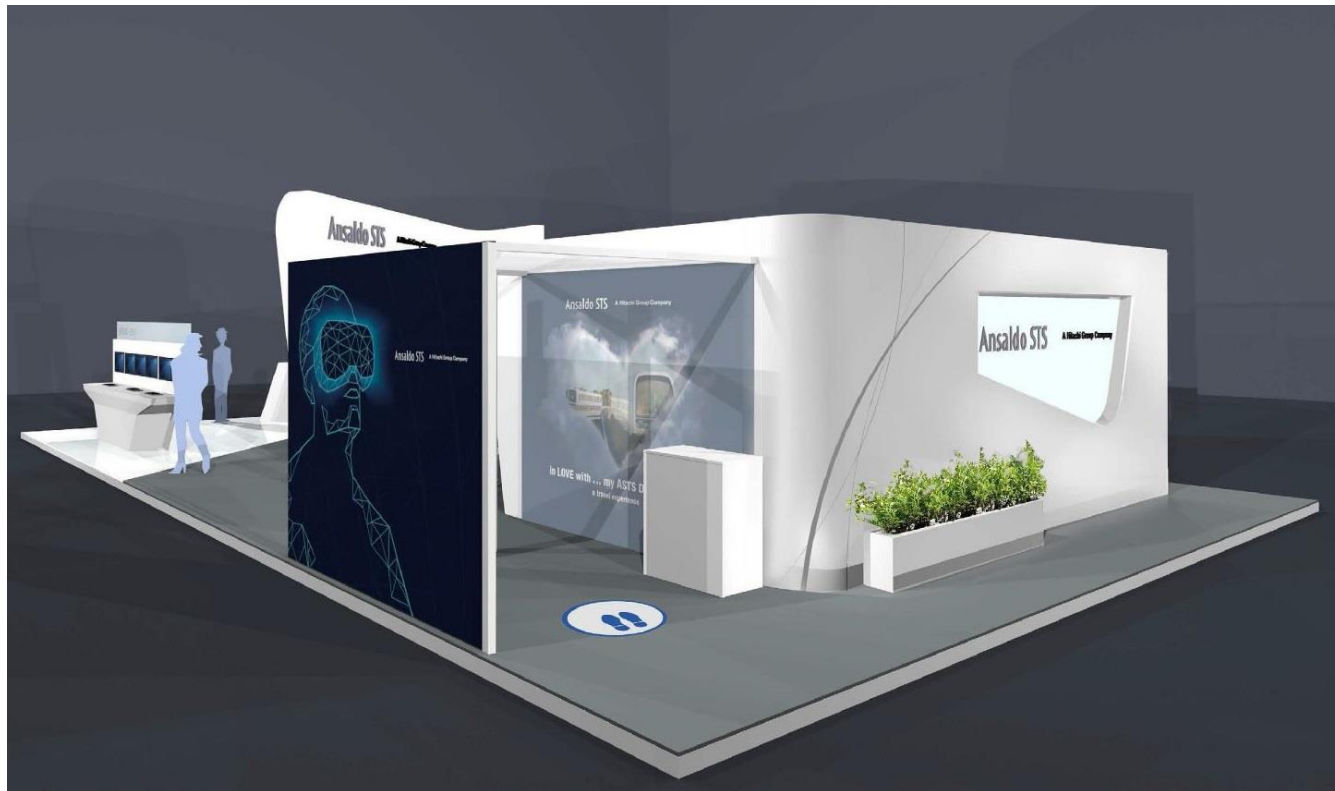
The Copenhagen Metro line consists of 21 km of double track (10 km underground and 11 km of elevated track) and passes through 22 stations connecting the various parts of the city centre, the area of Ørestad and the airport. Its 34 unattended trains travel at a maximum speed of 80 km/h, ensuring that passengers have two minutes to wait during peak hours, and are guaranteed a 24-hour service.



UITP 2017 in Montreal (1/2)

Technology, innovation and sustainable development were the main topics at the core of the 62th edition of the UITP Global Public Transport Summit, the most important two-years world exhibition on urban and regional transportation, which took place in Montreal, Canada, between the 15th and the 17th of May 2017.

Ansaldo STS and Hitachi Rail Italy, key players at the international fair with a joint stand (Hall 2), presented the newest technologies and products to clients, institutions, partners and suppliers. Key players of the 2017 edition were the metros, both traditional and driverless, chosen by a growing number of cities across the world: Milan, Rome, Copenhagen, Miami, Honolulu, Taipei, Riyadh and Lima.



UITP 2017 in Montreal (2/2)

Ansaldo STS invited guests, clients and partners to join a proper “travel experience”, visiting both the driverless underground solutions and, moreover, the ultimate technologies designed for subways and railway transportation (passenger and freight): the Communication Based Train Control (CBTC), a new generation of rail transit control, which enhances flexibility, reduces maintenance costs and improves interoperability; and the European Rail Traffic Management System (ERTMS), the new European interoperable railway signalling system, designed to guarantee the interoperability beyond borders (in Europe as well as in Asia, Oceania and Middle East).



4. Financials

FY 2017 - Key Facts

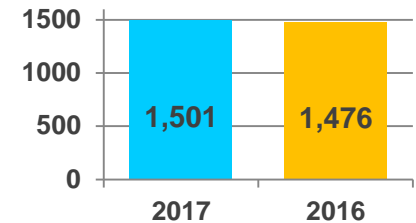
□ **New Orders** at 1,501 M€, 25 million higher (+2%) compared with FY 2016. The main orders booked in 2017 are HS/HC Verona-Vicenza junction, the first functional section of the Verona-Padua line, for 336 M€; Baltimore Metro with MTA for 133 M€; the framework agreement with RFI for 100 M€; ACC and ACC-M signaling equipment in Italy for 40 M€.

□ **Revenue** at 1,361 M€, with an increase of 34 million (+3%) compared with FY 2016, mainly due to higher contribution coming from projects in Americas, Middle East and Rest of Europe regions, only partially offset by lower production in Asia Pacific region and in Italy, mostly as a result of achieving the final phase of some contracts.

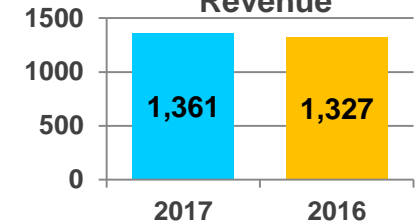
□ **EBIT** at 100.8 M€, 26.0 M€ lower versus last year. **ROS** is 7.4% compared to 9.6% in FY 2016. FY 2017 EBIT is penalized by appropriate provisions related to recent facts in North Europe area (35.2 M€), while in the past year it included cumulative lower costs related to ZST arbitration outcome (8.1 M€) and the resignation of some strategic managers (2.4 M€). Higher volumes effect is compensated by the increase in R&D and Marketing & Sales investments.

□ **Net Financial Position (cash)** at 357.5 M€, 20 M€ higher compared with FY 2016 (338.0 M€). FOCF at 30.6 M€ compared to 37.9 M€ in FY 2016. 2017 cash flow is negatively affected by the advance payments returned to the Swedish client SL (approx. 37 M€, net of VAT), only partially offset by higher cash collections in the last 2017 quarter. On the other side 2016 cash flow was negatively affected by the ZST arbitration outcome on Libya project for an amount of 37.4 M€.

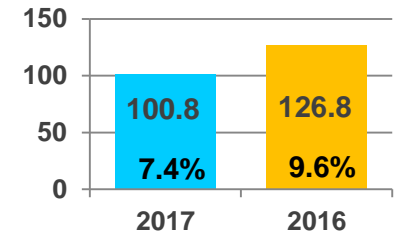
New Orders



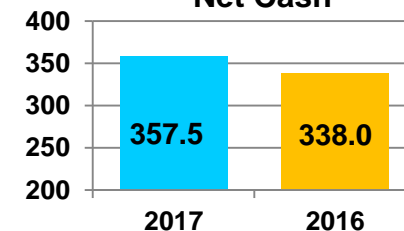
Revenue



EBIT & ROS



Net Cash



FY 2017 Results - Key Data

<i>(M€)</i>	FY 2017	FY 2016	<i>% change</i>
New Orders	1,500.8	1,475.8	1.7%
Order Backlog	6,457.5	6,488.4	-0.5%
Revenue	1,361.0	1,327.4	2.5%
EBIT	100.8	126.8	-20.5%
ROS	7.4%	9.6%	-2.2 p p
Tax Rate	34.5%	33.2%	1.3 p p
Net Result	64.9	77.9	-16.7%
Net Working Capital	127.2	120.5	5.5%
Net Financial Position	(357.5)	(338.0)	5.8%
R&D	41.3	36.7	12.7%
Total Headcount	4,228	3,951	7.0%
EVA	34.0	57.9	-41.2%

New ruling and reason

- The year 2018 sees a change in the way we account for large contracts due to the introduction of IFRS 15 new accounting principle, mandatory from January 1st, 2018
- The objective of IFRS 15 is to establish the principles that an entity shall apply to report useful information to users of financial statements about the nature, amount, timing, and uncertainty of revenue arising from a contract with a customer.

The new standard

Performance obligation

A promise in a contract to transfer to the customer either:

- a good or service (or a bundle of goods or services) that is distinct; or
- a series of distinct goods or services that are substantially the same and that have the same pattern of transfer to the customer.

Transaction price

The amount that an entity expects to be entitled in exchange for transferring promised goods or services to a customer.

Bidding costs

Identify the Bidding costs with the new rule to capitalize the fulfillment costs and incremental bid costs, while all the other bidding costs cannot be recorded on the project anymore.

New ruling and expected impacts on ASTS

- Accounting new rules can be summarized mainly as split of contracts among performance obligations and bidding costs not to be recharged on projects anymore.
- The new accounting principle effects have been estimated by Ansaldo STS for the year 2018

As a general statement, it is important to say that: 1) No impacts will be recognized on whole life revenue and margin of single contracts; 2) No impacts will be recognized on cash flows

Mainly as a consequence of the split of contracts among performance obligations (i.e. two separate projects for Delivery and O&M) and depending on the percentage of completion of the single projects, it has been estimated a negative impact on the 2018 profitability, for approximately -50 basis points of ROS.

5. 2018 guidance

2018 main Key Data Guidance

(M€)	2017 Actual	2018 Guidance
New Orders	1,500.8	1,500 - 2,000
Order Backlog	6,457.5	6,450 - 7,050
Revenue	1,361.0	1,350 - 1,450
ROS	7.4%	8.0% - 8.5%
Net Financial Position	(357.5)	(300) - (380)

- 2018 ROS is penalized by the implementation of the IFRS 15 new standard. Estimated impact is approximately -50 basis points.
- 2018 NFP reflects a dividend payment of 30 M€, 0.15 € per share.

6. Q&A

7. Accounting definitions

Renato Gallo, the Manager in charge of preparing the company's financial reports, hereby declares, pursuant to article 154-bis, paragraph 2 of the Consolidated Law on Finance, that the actual accounting information contained in this presentation corresponds to document results, books and accounting records

This Analysts Presentation contains forward-looking statements which are based on current plans and forecasts of Ansaldo STS S.p.A. Such forward-looking statements are by their nature subject to a number of risk and factors not foreseeable that could cause actual results to differ from the plans, objectives and expectations expressed in such forward-looking statements.

These such forward-looking statements speak only as of the date on which they are made, and Ansaldo STS S.p.A. undertakes no obligation to update or revise any of them, whether as a result of new information, future events or otherwise.

NB: Ansaldo STS's management also assesses the performance of the group using certain indicators that are not defined by the IFRS.

The components of each indicator are described below as required by CESR/05 - 178b Communication:

EBIT: earnings before interest and taxes, before any adjustment. EBIT excludes gains or losses on unconsolidated equity investments and securities, as well as any gains or losses on sales of consolidated equity investments, which are classified under “financial income and expense” or “share of profits (losses) of equity-accounted investees” if related to equity-accounted investments.

Return on Sale (ROS): it is calculated as the ratio of EBIT to Revenue.

Free operating cash flow (FOCF): this indicator is the sum of cash flows generated by (used in) operating activities and cash flows generated by (used in) investing and disinvesting in property, plant and equipment, intangible assets and equity investments, net of cash flows from acquisitions and sales of equity investments which are deemed “strategic” due to their nature or importance. The FOCF is shown in the reclassified consolidated statement of cash flows.

Economic Value Added (EVA): it is the difference between EBIT, net of income taxes and the cost of the average invested capital of the current and previous year measured on the base of the Weighted Average Cost of Capital (WACC).

Net Working Capital: It is working capital less provisions for current risks and other current assets and liabilities.

Net Financial (Position) or Debt: The calculation model used complies with paragraph 127 of the CESR/05-054b recommendations implementing Regulation (EC) n° 809/2004.

New Orders: It is the sum of the contracts agreed with customers during the reporting period that meet the contractual requirements to be recorded in the orders book.

Order Backlog: It is the difference between new orders and revenue for the period (including the change in contract work in progress). This difference is added to the backlog for the previous year.

Headcount: It is the number of employees recorded in the relevant register on the reporting date.

Research and development costs: total expense incurred for research and development, both expensed and sold. Research expense taken to profit or loss usually relates to “general technology”, i.e. aimed at gaining scientific knowledge and / or techniques applicable to various new products and / or services. Sold research expense represents that commissioned by customers and for which there is a specific sales order and it is treated exactly like an ordinary order (sales contract, profitability, invoicing, advances, etc.) in accounting and management terms.

8. Glossary of rail terminology

ACC – M: “Apparato Centrale Computerizzato Multistazione” is a centralized interlocking system through which it is possible to manage multiple stations along the line.

APRs: Automatic Position Reporting System, radio based digital communications system for local, regional, or long distance.

ATC: Automatic Train Control, or ATC, is an integrated signaling system that guarantees the secure movement of trains. ATC integrates various subsystems positioned on-board and wayside. In addition to a full interlocking system, a complete ATC system consists of three subsystems: (i) ATP, (ii) ATO and (iii) ATS.

ATP: Automatic Train Protection, or ATP, is an ATC subsystem responsible for the safe operation of a signaling system. It imposes speed limits on trains, both to maintain a safe operating distance between them and to comply with safety and speed requirements. The ATP system is designed to be a fail-safe (vital) system.

ATO: Automatic Train Operation, or ATO, is an ATC subsystem which performs on-board, non-vital functions normally performed by a train driver, including ensuring a smooth acceleration of the train to the running speed, speed regulation and smoothly stopping the train at the proper position at station platforms or in front of stopping signals. ATO subsystems are primarily located on-board and represent one of the principal components of a driverless system. Additionally, ATO subsystems report vehicle health status to the central control offices.

ATS: Automatic Train Supervision, or ATS, is an ATC subsystem which operates to control trains automatically by means of ATO and ATP, in accordance with the railway timetable. This also involves a CTC system.

BALISE: An electronic beacon or transponder placed between the rails of a railway as part of an Automatic Train Protection system.

CBI: Computer Based Interlocking, or CBI, is an Interlocking System (see below) where the traditional wired networks of relays are replaced by software logic running on special-purpose fail-safe control hardware. The fact that the logic is implemented by software rather than hard-wired circuitry greatly facilitates the ability to make modifications when needed by reprogramming rather than rewiring (ACC, MicroLok® and SEI/PAI-NG are the Ansaldo STS CBI interlockings).

CBS: Communications Based Signalling.

CBTC: Communication Based Train Control, or CBTC, is a system that allows for the interchangeability of different technological systems in use on various metro lines. CBTC can be understood as an attempt to create an ERTMS type standard for the mass transit industry.

CENELEC: European Committee for Electro technical Standardization.

CTC: A Centralized Traffic Control system, or CTC, monitors the status of signaling on a line or network and displays the relevant status information to a central operator, assists in the management of the line or network consistent with the timetable and exercises control to prevent small schedule disturbances from becoming traffic jams. CTC also notifies the operator of ATC equipment failures and of failures in traction power and passenger station support facilities.

CTC EVO: Evolved Centralized Traffic Control.

CTCS : Chinese Train Control System, a train control system used on railway lines in China

DPL: Dedicated Passenger Line.

DTG: Distance to Go, Wayside and on board ATP system track circuit based.

ERSC: Emulation Code Block, system that assure distance from trains with code in track circuits

ETCS: The European Train Control System (ETCS) is a signaling, control and train protection system designed to replace the many legacy safety systems currently used by European railways, especially on high-speed lines.

ERSAT: latest satellite generation that interfaces and integrates the railway technology ERTMS (European Rail Traffic Management System) with the navigation and satellite positioning technology Galileo. The acronym comes from ER, for ERTMS, and SAT, indicating the satellite technology.

ERSAT EAV: project, funded with the contribution of GSA, where new localization algorithms were tested together with the ability to integrate EGNOS and Galileo in the Ansaldo STS's ERTMS solution, integrated with satellite technology and scheduled for ERSAT solution. The acronym EAV means Enabling and Validation.

ERTMS: The European Rail Traffic Management System, or ERTMS, was introduced by the EU in 1992 as a means of creating a uniform system of command, control and coordination of rail traffic to allow for "interoperability" throughout EU territory. The ERTMS standard exists at three levels (ERTMS 1, 2 and 3) depending on use, each distinguished by the type of wayside and on-board equipment used and the manner in which this equipment communicates relevant data.

EUROCAB / EVC: Onboard computer used to process ETCS information.

GA: Generic Application.

GCP: Grade Crossing Predictor, an electronic device which is connected to the rails of a railroad track and activates the crossing's warning devices (lights, bells, gates, etc.), based on a range of factors, including train speed, which minimizes waiting delays for drivers and therefore reduces the number of accidents.

GNSS: Global Navigation Satellite System, satellite-based global navigation system, can rely on US GPS (Global Positioning System), or Russian GLONASS (Global Navigation Satellite System), or European Galileo system under development.

GP: Generic Product.

GSM-R: Global System for Mobile Communications-Railway, an international wireless communications standard for railway communication.

HERMES: Automation – Supervision system used for mass transit system.

HSL: High Speed Line, or HSL, refers to railway lines with capacity for speeds in excess of 200 km/h (125 mph).

ICSS: Integrated Control & Safety System. Integrated Communication Switching System.

IETO: Integrated Electronic Train Order.

IXL: Interlocking System. An interlocking system is responsible for the reliable and safe movement of trains inside a station, through complex junctions and for the length of the line. The interlocking system ensures that train movement is permitted only when a route is available and the switches along this route are safely locked in their position. In all cases the interlocking allocates a track portion or a route to one train at a time, excluding all others.

LDS: Localization Determination System, satellite-based solution for train control system SIL 4 localization.

LEU: Encoder. Product that is interfaced to balise and permit it to change the telegram to be sent to the train in the intermittent ATP according to the status of the route.

LRT: Light Rail Transit, or LRT, refers to a form of urban rail transit that utilizes equipment and infrastructure that is typically less massive than that used for metro systems, with modern light rail vehicles usually running along the system.

MTBF: Mean time between failures is the predicted elapsed time between inherent failures of a system during operation.

MTBHE: Mean Time Between Hazardous Events, estimated time between two events that can cause an hazardous event.

MT: Mass Transit.

OCC: Operational Control Centre, system that monitors the status of signaling on the line and the location of trains.

OTP: Optimizing Traffic Planner, or OTP, is a traffic management system that permits real time monitoring of the positioning of trains throughout a railway system. OTP optimizes system or network capacity by safely minimizing the time between trains, reducing operating costs. OTP is primarily designed for those markets where railway systems infrastructure is being used to full capacity.

PTC: Positive Train Control, North American freight railway implementation of CBTC.

RBC: Radio Block Centre. All trains automatically report their exact position and direction of travel to the RBC at regular intervals. RBC sends by radio fail safe information to the train (ATP).

ROC: Remote Operations Centre.

SA: Specific Application.

SCADA: A Supervisory Control And Data Acquisition system, or SCADA, allows for the supervision of the various subsystems at work in a railway or mass transit environment. SCADA collects information from remote installations, transfers it back to a central office, analyzes the information, takes appropriate action and displays that data on a number of operator screens.

SCC: Automation – Supervision system used for railways system.

SCMT: Sistema di Controllo della Marcia del Treno. Automatic train protection system.

SIL: 0, 2, 4: Safety Integrity Level (SIL) is determined for components and systems with safety functions.

SSA: Support System for Automatic dispatch.

SSC: Sistema Supporto Condotta, Italian train stopping system. Less sophisticated than SCMT.

STO: Semi-automated Operation Mode.

TETRA: Terrestrial Trunked Radio , digital data and voice communication system.

TLC: Telecom networking.

TSRs: Temporary Speed Restrictions.

TTCS: Train Conformity Check System verifies the conformity of running Rolling Stocks.

TVM: Transmission Voie-Machine (TVM, track-to-train transmission in English) is a form of in-cab signalling originally deployed in France and used on high-speed railway lines.

UTO: Grade of Automation for systems, where there is no driver in the front cabin of the train, nor accompanying staff assigned to a specific train. This can also be referred to as Unattended Train Operation, or UTO.

VSS: Vital Safety Server used in freight application (both as for IXL and RBC).

Our commitment to the theme of sustainable development is expressed in the countries where we operate, across five continents, through the dissemination of our corporate vision, attention to environmental, social, and promote our work through a climate of cooperation with local cultures.



In coherence with our vision we have joined the Global Compact, a voluntary initiative launched by the UN to spread the culture of respect for human rights, labor, environment and the fight against corruption.

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